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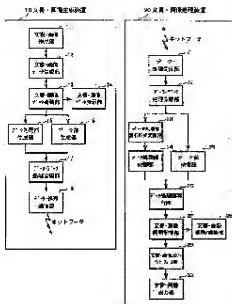
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(54) **IMAGE TRANSMITTER, IMAGE RECEIVER, IMAGE PROCESSING SYSTEM, AND DOCUMENT/IMAGE FORMAT**



(57)Abstract:

PROBLEM TO BE SOLVED: To attain mutual electronic document exchange, transmission, display, edition, storage, and printing processing environments independent of various computing device and network environments in network computing environments.

SOLUTION: In a document/image generating device 10, a data part generation part 16 generates a data part from document/image data generated by a document/image data generation part 12, a data processing part generation part 15 generates a data processing part, a data/data processing synthesis part 17 synthesizes these generated parts, and a data/processing transmission part 18 transmits the synthesized result. In a document/image processor 20, a data/ data processing

separation part 22 separates the received document/image data into the data part and the data processing part, a data processing part execution format conversion part 23 converts the data processing part into a document/ image processing format to be executed in an environment in which the data processing part is entered and a data processing part execution part 26 interprets/executes the data part based on the converted result.

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DETAILED DESCRIPTION

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CLAIMS

[Claim(s)]

[Claim 1] The image sending set characterized by having the document and an image generation means to generate a document and image data and to add that processing program to this document and image data, and a transmitting means to transmit the processing program to the document and image data generated by said document and image generation means, and this document and image data.

[Claim 2] Said document and image generation means are an image sending set according to claim 1 characterized by having a synthetic means to compound and output a data generation means to generate a document and image data, and the processing program which interprets and develops the document and image data generated by said data generation means, and this document and image data.

[Claim 3] The image receiving set characterized by having a receiving means to receive the processing program added to a document, image data, and said document and image data, and a device activation means to perform the processing program received by said receiving means and for it not to depend.

[Claim 4] A separation means to separate said document and [with which said activation means was received by said receiving means] image data, and said processing program, An execute-form conversion means to change into the document and image-processing format performed in the environment which incorporated said processing program separated by said separation means, The image receiving set according to claim 3 characterized by having a data activation means to interpret and perform said document and image data separated by said separation means based on said processing program by which formal conversion was carried out with said execute-form conversion means.

[Claim 5] The document and an image generation means to generate a document and image data and to add that processing program to this document and image data, The image sending set which has a transmitting means to transmit the processing program to the document and image data generated by said document and image generation means, and this document and image data, A receiving means to receive said processing program added to said document and image data transmitted from said image sending set, and this document and image data, The image processing system characterized by having the image receiving set which has a device activation means to perform the processing program received by said receiving means and for it not to depend.

[Claim 6] Said document and image generation means are an image processing system according to claim 5 characterized by having a synthetic means to compound and output a data generation means to generate a document and image data, and the processing program which interprets and develops the document and image data generated by said data generation means, and this document and image data.

[Claim 7] A separation means to separate said document and [with which said activation means was received by said receiving means] image data, and said processing program, An execute-form conversion means to change into the document and image-processing format performed in the environment which incorporated said processing program separated by said separation means, The image processing system according to claim 5 characterized by having a data activation means to interpret and perform said document and image data separated by said separation means based on said processing program by which formal conversion was carried out with said execute-form conversion means.

[Claim 8] Two or more data generation means to generate the document and image data of the format that a document differs from said image generation means, The 1st synthetic means which compounds the processing program which interprets and develops two or more document and image data, and the document and image data of these plurality which were generated by said two or more data generation means, and is outputted as two or more document and image files, It has the 2nd synthetic means which compounds two or more document and image files outputted from said 1st synthetic means, and is outputted as single document and image file. Said transmitting means is an image processing system according to claim 5 characterized by carrying out mutual transmission of the single document and image file outputted from said 2nd synthetic means between said image receiving means.

[Claim 9] Said receiving means performs mutual transmission of said single document and image file between said transmitting means. Said activation means The 1st separation means which divides into each term unit said single document and image file received by said receiving means, and is outputted as two or more document and image files, The 2nd separation means which separates said document and image data, and said processing program for two or more of said document and image files separated by said 1st separation means, respectively, An execute-form conversion means to change into the document and image-processing format performed in the environment which incorporated said processing program separated by said 2nd separation means, The image processing system according to claim 8 characterized by having a data activation means to interpret and perform said document and image data separated by said 1st separation means based on said processing program by which formal conversion was carried out with said execute-form conversion means.

[Claim 10] The image processing system according to claim 5 characterized by forming two or more said image sending sets.

[Claim 11] The image processing system according to claim 5 or 10 with which said image sending set is characterized by having two or more creation and execution environments.

[Claim 12] Said activation means is an image processing system according to claim 10 characterized by having an actuation means to deal with two or more document and image data transmitted from said two or more image sending sets as the document and an image file of a single format, and to perform term rectification and edit processing.

[Claim 13] The document and graphics format which has the data-processing section for interpreting and developing the data division which are component data of a document and image data, and said document and image data by the pair, and is characterized by said data division and said data-processing section being disengageable.

[Claim 14] The document and graphics format according to claim 13 characterized by providing in a self-freezing format, without depending on other activation resource environments for the execution environment for interpreting said data division and changing into the format in which inter exchange, transmission, a display, edit, preservation, and printing are possible.

[Claim 15] They are the document and graphics format according to claim 13 to which said data division are the color proper information corresponding to the resource execution environment transmitted, and said data-processing section is characterized by being the color transform-processing section which carries out conversion activation at the format which can print [inter exchange, transmission, a display, edit, preservation, and] said data division in said activation resource environment.

[Translation done.]

[Detailed Description of the Invention]

[0001]

[Field of the Invention] the image processing system, and the text and the graphics format (the electronic document structure) which enable the inter exchange, transmission, the display, the edit, the preservation, and printing of the electronic document by which this invention is created on a network computer in any network computer environments -- being related -- especially -- a device -- it is related with the document and the graphics format used for the image processing system for guaranteeing the readability of the document and the image file of offer of a a document and an image execution environment, an independence activation and a self-freezing mold, and a a document and a graphics format with the passage of time, and this. [**** / un-]

[0002]

[Description of the Prior Art] Various electronic documents are simply created by technical progress, such as multimedia, computer hardware software, DTP hardware software, and a network infrastructure, in recent years, and the environment in which inter exchange, transmission, a display,

edit, preservation, and printing are possible has been ready. In such a situation, in the electronic document created on the various application program performed in the computer resource which makes a personal computer representation, on the network environment represented with the Internet, inter exchange, transmission, a display, edit and preservation, and in order to print, various file formats, application software, and a system appear, and are used.

[0003] As the typical file format, it is Adobe used for inter exchange, transmission, a display, edit, preservation, printing, etc. HTML (hypertext markup language) used in order to transmit and display contents information in a FlashPix format of PDF (portable document format) of Systems or Kodak and the WWW (World Wide Web) environment is mentioned.

[0004] Moreover, it considers as the software program which displays and edits them, and is Acrobat of Adobe Systems. Reader/Writer/Capture, FlashPix of Kodak Reader/Writer, And HTTP (hypertext transfer protocol) is used on the Internet. In order to transmit and display the electronic document (contents information) described in HTML It is NetScape of NetScape as WWW browser software used. Internet of Navigator or Microsoft Explorer is mentioned as a typical thing.

[0005] Many electronic documents have come to exist in the network environment from which a network computing & electronic document environment with such an available thing is represented in the past several years by breadth and the Internet. Moreover, also in a printing (printing) environment, a new change is breaking out by having come to use similarly the electronic document which exists on a network as source data of a printout.

[0006] In the printing environment of a conventional type, various Page Description Language files (PDL file) are outputted using the printer driver depending on a host computer hardware operating system, a PDL file transmits to the body of a printer with the decided network protocol, and the method of interpreting the PDL file to which the body of a printer has been sent, carrying out expansion processing at the raster image depending on the property of a printer, and obtaining a printed output is mentioned as a general approach (for example, refer to JP,6-162008,A).

[0007] As a typical thing of the Page Description Language said here, it is Adobe. Interpress of PostScript of Systems and a Xerox company, Art of Fuji Xerox, etc. are mentioned. Moreover, as a network protocol, they are TCP/IP and Apple similarly. IPX of Apple Talk of Computer and an Novell company, NetBEUI of Microsoft, etc. are mentioned as a typical thing.

[0008] Here, it considers printing the electronic document described in HTML which exists on WWW in the old general printing architecture mentioned above. In case the printed output of the electronic document of HTML displayed in the present condition and a WWW browser is carried out Even if the contents information on the electronic document of HTML exists in a location like a network top throat physically The data is once read on the host computer with which a WWW browser exists. A WWW browser and a printer driver perform transform processing to various Page Description Languages or printer raster data, and the method of carrying out delivery and interpretation /

expansion processing for the data to the body of a printer made into the purpose, and obtaining a printed output is taken.

[0009] By this approach, in order to read the contents information on the electronic document by HTML and to perform transform processing to various kinds of PDL files, there is a problem that high-speed printed output processing cannot be performed. Moreover, since the electronic document data of HTML have low document description capacity, Almost all the document object that exists on a WWW server is dealt with in many cases as raster primitive data of resolution for which it depended on the device now. Moreover, in the display of the document by HTML on WWW, no prior WYSIWYG (What You See Is What YouGet) processings to color information may be performed in the present condition. Compared with the electronic document and the printing approach of changing into a PDL file the electronic document generated with general application, and obtaining a printed output, the present condition is that the quality of the electronic document print environment by HTML is greatly inferior.

[0010] Moreover, in old general printing architecture, it is necessary to, support the various printer drivers depending on a host computer hardware operating system network protocol on the other hand. However, it sets by the WWW environment using HTML-HTTP built on the Internet. Without depending to two or more host computer hardware operating system network protocols Since various network computers are connectable in a single environment, The property that it is possible to perform easily transmission, display, preservation, and printing of an electronic document is used. Without sending temporarily the electronic document described and displayed in HTML to the host computer environment where a WWW browser exists When the body of a printer which transmits to the various printers connected on the direct network, and receives the electronic document by HTML interprets HTTP directly, as an electronic document file Reception, A HTML electronic document file is interpreted and developed and a product with the printing architecture of obtaining a printed output is appearing partly recently.

[0011] The printer controller which supports such printing architecture is equipped with the interpreter for generating the raster image for which interpreted the network protocol interface and HTML which interpret HTTP, and it depended on the printer device. It becomes unnecessary to be able to build a printing environment unlike the general printing environment of a conventional type, without being dependent on a host computer hardware operating system network protocol, and to support two or more printer drivers depending on various host computer network protocol and PDL files in this printing architecture.

[0012] Moreover, since it is not necessary to read the electronic document data described in HTML which exists on a network on the host computer with which a WWW browser exists once, compared with the conventional general printing architecture, it becomes possible to perform printing processing at a high speed. However, compared with the printout processing by the general approach using an

application data usual in the electronic document data based on HTML, it is a fact too in the present condition that the printing quality is also inferior. The detail of the architecture about such Internet printing that will become general from now on is Printer Working Group. It can grasp by referring to the document "Internet Printing Protocol/1.0:Model and Semantics."

[0013] Moreover, the same thing is considered from a viewpoint of the readability of inter exchange, transmission, display and edit / preservation processing of an electronic document, and an electronic document with the passage of time. Until now, it depended for all processings of the usual electronic document of generation, inter exchange, transmission, a display, edit, preservation, and printing on the application software which generated the electronic document in the time when the network and the network computing environment were dealt with as a special existence.

[0014] After transmitting the electronic document generated in the application software of once specification to other execution environments, in case display, edit, preservation, and printing were performed, the same application software as the time of creating the electronic document was surely required. It cannot be overemphasized that this limitation had become the hindrance of exchange of a free electronic document in the network environment.

[0015] The electronic document format used in the Internet environment by WWW and its environment affected it also to such a problem. The WWW environment made possible inter exchange, transmission, display, edit and preservation / printing environment of the electronic document independent of various computer hardware operating systems in the level which has used a WWW browser and HTML-HTTP, and has succeeded the inter exchange and the readability with the passage of time on the network of an electronic document in a certain thing [carrying out improvement in fixed level] in the framework. Moreover, it is Adobe for the purpose of the inter exchange, transmission, the display, the edit, preservation, and printing processing of an electronic document which are used in the framework. The application using the PDF file developed by Systems is increasing recently.

[0016] Adobe Systems can use this file format for creation, the inter exchange, transmission, a display, edit, preservation and printing of an electronic document, and electronic document-ization of a paper document. And it positions as an electronic file format independent of computer hardware operating system application software. The Internet can be widely used for creation of an electronic document, and inter exchange, transmission, display, edit and preservation / printing processing in the network and network computing environment which are made into representation. Moreover, it recommends as a file format which guarantees semipermanent readability with the passage of time, and various business is developed.

[0017] Moreover, it ages 1993 and he is U.S. Sun. A thing called Java language exists as programming language with which development is started focusing on Microsystems. the development plan of this Java language -- a network top -- easy -- pursuit and the device of the portability in which transmission

and inter exchange are possible -- it is in offer of a language system [**** / un-] and an executive operation system. It is Java which the application software generally created in Java language is called a Java applet, and does not depend for the actual condition on any devices and execution environments. Byte It is generated and transmitted in the form of Code, and executive operation is carried out with an execution environment.

[0018] WWW browser application software with a Java execution environment, and on a various common application operating system, interpretation (exchange) processing is carried out and the Java applet and Java application which were created in Java language are performed. As an executive operation system of Java language, it is Java. Byte Java which performs agency (interpretation and exchange) processing with Code and hardware dependence execute machine language Byte Code AWT which manages the interface of Interpreter and control of the window system used with various operating systems (Abstract Window Toolkit) The execution environment called is developed to various hardware platform / operating system window systems, and is offered from each company.

[0019] Thus, he is trying to secure the portability, the execution environment device non-dependency, and the workability with the passage of time of an application program in a network computing environment in Java language and a Java applet execution environment by eliminating the dependency of an application program and its execution environment, and various computer devices.

[0020]

[Problem(s) to be Solved by the Invention] However, in the conventional technique mentioned above, inter exchange, transmission, display, edit and preservation / printing processing is possible at high definition and a high speed in the electronic document which exists in a network, and the following technical problems exist as the electronic document format and printing architecture which can guarantee readability with the passage of time semipermanently.

[0021] As one of them, in case electronic document formats (PDF, HTML, FlashPix, etc.) of the conventional technique perform inter exchange, transmission, display and edit / printing processing, they surely need specific exclusive applications (Acrobat, a WWW browser, FlashPix Reader/Writer, etc.), and since [of the contents of an electronic document, and a program] a limit of physical and logical coincidence existence nature and a dependency exists, they cannot guarantee completely the readability of an electronic document with the passage of time. Moreover, in the network computer environment where various computer devices exist, the conditions of portability with the passage of time that an electronic document is required as inter exchange, transmission, a display and preservation, and an electronic document format for printing are not fulfilled.

[0022] If it explains as a concrete problem which is easy to understand, the application software (specifically Acrobat Reader) for intervening a network, and surely displaying, editing, saving and printing a PDF file for the electronic document by the PDF file, in case it prints, reception, a display, edit and preservation, and is required, and if it does not have the application software, display, edit, and

printing of cannot be done.

[0023] Moreover, even if it is in the environment which application required for a network environment exists and can be acquired gratuitously, there is a problem that processing which receives the application software must be performed. Furthermore, the user without an environment acquirable from a network gratuitously cannot acquire the application software. Also in other electronic document formats which carried out point **, it has the same problem with it.

[0024] As other one, when carrying out printing processing of the electronic document format, without intervening various network computer resources in the network environment which uses the Internet representation, the quality at the time of printing the electronic document may be unable to become a form depending on the expression capacity and the processor which the format format of the electronic document has, and may be unable to pull out the quality engine performance of the image processing system aiming at a printout to the maximum extent.

[0025] If it explains as a concrete problem which is easy to understand, in the printing processor which carries out delivery processing of the contents data of the WWW browser created in HTML at a direct image processing system, the printing quality of ***** will have a form depending on the transcription of HTML, and almost all the drawing object will be processed as a raster primitive near the bit map format depending on the display device (creation environment). Thus, the dependency of various network computing devices is eliminated, and in the system which prints electronic document data (display), when only the image and drawing format for which it depends on a specific environment as an electronic document format which needs a high-definition expression can be chosen, various problems are caused to a quality airline printer (printing / display environment).

[0026] However, a printing environment will be considered to a subject and making it the single high format structure of document expression capacity will cause the problem of the complexity of expansion processing of document structure, and degradation of the overall processing engine performance. The same problem as this arises an electronic document in a meaning also in the network document system and electronic document format architecture which carry out decision dependence rather than has independent conveyance medium and indicative-data structure of an electronic document of performing inter exchange, transmission, display, edit, and preservation. Properly speaking, a transmission medium and an electronic document format must have an independence completely. Moreover, as for determining them, it is desirable that he is a document implementer.

[0027] This invention is made in view of the above-mentioned technical problem, and the place made into the purpose aims at offering the document and image data format (electronic document structure) used for the image processing system and this which realize inter exchange, transmission, display, edit and preservation / printing processing environment of the electronic document which is not dependent on various computing devices and network environments in a network computing environment.

[0028]

[Means for Solving the Problem] The image sending set according to claim 1 generated a document and image data, and is equipped with the document and an image generation means to add that processing program to this document and image data, and a transmitting means to transmit the processing program to the document and image data generated by this document and image generation means, and this document and image data. Moreover, the image receiving set according to claim 3 is equipped with a receiving means to receive the processing program added to a document, image data, and this document and image data, and a device activation means to perform the processing program received by this receiving means and for it not to depend. And the image processing system according to claim 5 is equipped with the image sending set according to claim 3 and the image receiving set according to claim 5.

[0029] In the image processing system of the above-mentioned configuration, in case divide the contents and the program structure of an electronic document into the document program for displaying and editing document contents data and them, respectively, and it is not made to exist separately, but an electronic document is created in an image sending set and electronic document data are generated, it generates as document contents data (a document and image data) and electronic document file data which has both document programs (processing program) by the pair.

[0030] In that case, a document program is generated as program data with the programming language and the execution environment independent of various computing devices in a network computing environment. The execution environment which can display, edit and preservation / printing process the electronic document can be offered without being independently dependent on a self-extraction format, i.e., a device, in an image receiving set (network computing environment) by this, without needing any application programs (device un-depending).

[0031]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail with reference to a drawing. Drawing 1 is the block diagram showing the outline of the configuration of the image processing system concerning the 1st operation gestalt of this invention.

[0032] In drawing 1, the image processing system concerning this operation gestalt consists of the document and image generation equipment 10 (image sending set) which transmits by generating a document and image data, and the document and image processing system 20 (image receiving set) which receive the document and image data transmitted from this document and image generation equipment 10, and perform that processing. A document and image generation equipment 10 are constituted by a document and the image creation section 11, a document and the image data generation section 12, a document and the image data accumulation section 13, a document and the image data display section 14, the data-processing section generation section 15, the data-division generation section 16, the data data-processing composition section 17, and data and the processing transmitting section 18.

[0033] In this document and image generation equipment 10, a document and the image creation section 11 are for creating the document and image of various formats on computers, such as a personal computer. The document and image created and edited are changed and outputted to the document and image data format for which it depended on a document and the image creation section 11 as a document and image data in a document and the image data generation section 12 by this document and image creation section 11. The document, the image creation section 11, and the document and the image data generation section 12 which are said here can be considered as general document and image creation application software (operating environment hardware is included).

[0034] Generally, the document and image data generated in a document and the image data generation section 12 are accumulated and held by a document and the image data accumulation section 13. Moreover, the document and image data accumulated in this document and image data accumulation section 13 are displayed in a document and the image data display section 14, and edit processing is performed. The document and the image data accumulation section 13 said here can be considered as a hard disk which is the primary-storage memory on a computer. Moreover, as a document and the image data display section 14, the display of a computer or other display devices may be used.

[0035] Next, the cotton of the document and image data accumulated in a document and the image data accumulation section 13, i.e., the document and image data which creation and edit completed, is carried out to the data-processing section generation section 15, and they are outputted as the data-processing section for using the data-processing section required in order to interpret and develop a document and image data, i.e., a document and image data, for the purpose, such as inter exchange, preservation, transmission, a display, edit, and printing. Similarly, cotton is carried out also to the data-division generation section 16, and it is changed as data division which are component data of a document and image data, and is outputted.

[0036] The cotton of the data division extracted in the data-processing section and the data-division generation section 16 which were extracted in the data-processing section generation section 15 is carried out to the data data-processing composition section 17, and they are generated as one new document and image file. The cotton of the document and the image file generated in the data data-processing composition section 17 is carried out to data and the processing transmitting section 18, and it is distributed to other image processing systems connected to various locations on a network.

[0037] On the other hand, the document and the image processing system 20 are constituted by data and the processing receive section 21, the data data-processing separation section 22, the data-processing section execute-form transducer 23, the data-processing section storage section 24, the data-division storage section 25, the data-processing section activation section 26, a document and the image expansion storage section 27, the document and image display / editorial department 28, a document and the image output interface section 30, and a document and the image output section 30.

[0038] In this document and image processing system 20, decomposition processing of the document and the image data received in data and the processing receive section 21 is carried out in the data data-processing separation section 22 at data division and the data-processing section. The data-processing section generated by carrying out decomposition processing in this data data-processing separation section 22 is changed into the format which can be performed by the data-processing section execute-form transducer 23 with the hardware and the software execution environment of this writing and an image processing system 20. The format which is outputted here and which can be performed points out a software program or a hardware script etc. which can be performed in the environment. The data-processing section changed into the execute form which can be performed in a receiving environment by the data-processing section execute-form transducer 23 is temporarily memorized by the data-processing section storage section 24.

[0039] The data division extracted by dissociating in the data data-processing separation section 22 on the other hand are memorized by the data-division storage section 25, and are held temporarily. Transform processing of the data-processing section and data division of a document and image data which were memorized by the data-processing section storage section 24 and the data-division storage section 25 is carried out to the format which can save [a display, edit, printing, and] the document and image data which cotton is carried out to the data-processing section activation section 26, and is made into the purpose.

[0040] It performs in the data-processing section activation section 26, and the cotton of the document and the image data by which formal transform processing was carried out is carried out to a document and the image expansion storage section 27, and display processing is performed by a document, image display, and the editorial department 28 on the occasion of edit and a display. Moreover, when the document and image data memorized by a document and the image expansion storage section 27 aim at the printed output, it is possible by being sent to a document and the image output section 30 via a document and the image output interface section 29 to obtain a printout.

[0041] Here, the difference in the configuration of the image processing system concerning the configuration and the conventional example of the image processing system concerning the 1st operation gestalt of the above-mentioned configuration is explained using drawing 2 and drawing 3 . In addition, the block diagram of the image processing system which drawing 2 requires for the conventional example, and drawing 3 are the block diagrams of the image processing system concerning the 1st operation gestalt. In addition, the same sign is given to an equivalent part and drawing 2 and drawing 3 are shown.

[0042] First, in the image processing system concerning the conventional example shown in drawing 2 , preservation / transmission processing is performed in the data format depending on the application program 34 which exists on the document creation computer 31 as an application data 35, and the document and image data created with the application program 34 on the document creation computer

31 are sent to the document receiving computer 32. In the document receiving computer 32, in order to display on the document receiving computer 32 and to change into the condition which can be edited by making the sent application data 35 into the electronic document 40, the application program 34 used for a document and image creation on the document generation computer 31 is required.

[0043] Moreover, since the print data 37 to the printer 33 which should print are outputted in case printing processing of a document and the image is similarly carried out in a printer 33 with the application data 35 received by document receiving computer 32, an application program 34 and the print data creator (printer driver) 36 are needed, and the print service program 38 and the print program 39 are required for coincidence to the printer 33 of the conventional example.

[0044] On the other hand, in the image processing system concerning the 1st operation gestalt shown in drawing 3, the document and image data created with the application program 34 on the document creation computer 31 are generated by the composer 42 who exists on the document creation computer 31 as DOKYU let 43 having the data division of its document and image data, and the data-processing section which is the processing program, and is sent to the document receiving computer 32.

[0045] In case the document receiving computer 32 which received the DOKYU let data 43 performs display / edit processing as an electronic document 40 Without needing the same application program 34 as existing on the document creation computer 31 used at the time of document preparation unlike the conventional example It separates into the data division and the data-processing section of a document and image data by carrying out expansion processing of the DOKYU let 43. It becomes possible to obtain the execution environment which can edit [a display and] the electronic document 40 by changing the data-processing section into the format which can be performed with the DOKYU let execution environment 44, and reading and carrying out executive operation of the data division after that.

[0046] Moreover, even if it faces printing processing, the printout processing to a printer 33 is possible similarly, without needing an application program 34, the print data creator (printer driver) 36, the print service program 38, and the print program 39 unlike the conventional example. In this case, the same processing as the print data creator (printer driver) 36, the print service program 38, and the print program 39 is included in the data-processing section of the DOKYU let 43 sent from the document creation computer 31. And the data division which should change and print those programs on the format which can be performed with the DOKYU let execution environment 44 are read, and it performs by performing expansion processing and print service processing.

[0047] Moreover, in the 1st operation gestalt, transmission of the single data format by the DOKYU let 43 is attained as the document and an image data format between the document generation computer 31, the document receiving computer 32, and a printer 33. Moreover, also in both printing processings which acquire the processing and the paper document 41 to the electronic document 40, DOKYU let 43 can be independently performed in a self-extraction format in the document generation computer

31 and a printer 33, and has the advantage that the DOKYU let execution environment 44 single also as ***** can be used.

[0048] Next, the image processing system which starts this operation gestalt using drawing 4 about the dependency of an image-processing component / document and a graphics format / electron, and a paper document, and the image processing system concerning the conventional example are explained by comparison. In addition, in the case of the image processing system concerning the conventional example, (b) is the case of the image processing system concerning the 1st operation gestalt, and (a) gives the same sign to drawing 2 and drawing 3, and an equivalent part, and drawing 4 is shown.

[0049] First, in order to transmit, display and edit the electronic document 32 on the personal computer of a document and the image data transmission point and to use, the application data 35 of the application 34 which created the electronic document 40, and the electronic document 40 is usually needed for explaining the dependency in the image processing system concerning the conventional example. Moreover, in order to perform printing processing and to obtain the paper document 41 which should be outputted, an application program 34, an application data 35, and the printer data creator (printer driver) 36 will be needed on a computer, and the print service program 38 and the print program 39 will be needed on a printer.

[0050] Next, the dependency in the image processing system which starts the 1st operation gestalt similarly is explained. The electronic document created on the document generation computer is generated by the composer 42 as DOKYU let 43, and is transmitted on the computer of the others on a network. In case the transmitted document is outputted as the electronic document 40 and a paper document 41, only the DOKYU let execution environment 44 is needed and each processing can be performed in a single data format and a single execution environment. The DOKYU let said here does not restrict the program DS, and is one of the proper gestalten as a transmission medium.

[0051] The internal structure of the image-processing component / document, and the graphics format which starts the 1st operation gestalt at drawing 5 is shown. First, if a composer's internal structure (a) is explained, a composer 42 will change into the component of the DOKYU let 43 the document and image data which operated on the electronic document generation computer and was generated with various application programs.

[0052] The data-conversion section 42-1 which performs an application data as a composer's 42 component, and performs conversion / generation processing as data division of the DOKYU let 43, The data-processing program transformation section 42-2 which performs conversion / generation processing for an application program execution environment as the data-processing section of the DOKYU let 43, The job service transducer 42-3 which generates the job service program with which printing, the contents of a document distribution job, etc. were described, It consists of the security attachment sections 42-4 for attaching the security program which can perform access authentication at the security and the distribution place of data which were transmitted.

[0053] Here, with the application program which generated this electronic document, the data-processing program by which transform processing is carried out in the data-processing program transformation section 42-2 is not restricted, but when an original file format is supported and it generates as data division inside a composer, transform processing of the expansion program which carries out expansion processing of that original data format is carried out, and it is attached as the data-processing section.

[0054] Moreover, the actuation by the composer of the job service transducer 42-3 and the security attachment section 42-4 is optional. This job service transducer 42-3 is used as follows. That is, the physical processing relevant to various printings by which executive operation is carried out to the job service transducer 42-3 after transmission or before transmission is described. This can be described to the document and graphics format generated in the activation resource environment where plurality differs. Thereby, also in a transmitting side or a receiving side, the executive operation of the physical processing relevant to printing to the job service transducer 42-3 becomes possible.

[0055] It is automatically attached to the data-processing section of a document and a graphics format, and is made to, include the security program of the self-activation mold in which renewal of information is possible, and a service service count program about the security attachment section 42-4 on the other hand. Thereby, activation of security, accounting, etc. is attained independently.

[0056] Then, the internal structure (b) of DOKYU let is explained. The DOKYU let 43 is constituted by the data-processing section 43-2 which carries out expansion activation of the data division 43-1 of the DOKYU let 43 in the computer of the data division 43-1 containing a document and image data, and a transmission place, and is changed into the format in which transmission, a display, edit, printing, and preservation are possible in order to transmit the document and image data created with various application programs on the document generation computer.

[0057] The data-processing section 43-2 is interpreted in the DOKYU let execution environment 44 on the computer of a transmission place, and after transform processing is carried out to the format which can be performed, expansion activation of it will be carried out. It is constituted by the document program 43-2-1 which carries out transform processing of a document and the image data to the format in which a display, edit, printing, and preservation are possible as a internal structure of the data-processing section 43-2 of the DOKYU let 43, the document job service program 43-2-2 with which processing of printing, a document distribution job, etc. was described, and the document security program 43-2-3 which can perform access authentication at the security and the distribution place of data. Here, attachment of the document job service program 43-2-2 and the document security program 43-2-3 is optional.

[0058] Next, the internal structure (c) of a DOKYU let execution environment is explained. The executive program interpretation and the transform-processing section 44-1 which interprets the executive program of the DOKYU let 43 in a DOKYU let execution environment, and carries out

transform processing to the execute form which can be performed with an execution environment (hardware software). It consists of the DOKYU let processing section 44-2 which controls interpretation and conversion / activation display processing of the DOKYU let program itself etc., and the document I/O device dependence processing activation section 44-3 which performs display processing and the interface depending on the display software of various execution environments. It is possible to use the Java language program execution environment which carried out point ** as a DOKYU let execution environment explained here. The configuration is described later.

[0059] Drawing 6 is the flow Fig. having shown the flow of conversion and processing of the document and graphics format in the image processing system concerning the 1st operation gestalt. The procedure of actuation of the image processing system concerning the 1st operation gestalt, and conversion and processing of a document and a graphics format is explained below using this flow Fig.

[0060] First, explanation of the actuation by the side of the document and the image generation equipment 10 which performs document generation and transmission generates the application document file 45 created with the application program as a DOKYU let file 46 which is an activation document file which includes data document handling and a job service security program by the composer 42. This generated DOKYU let file 46 is transmitted to the various computers of a distribution place via a network.

[0061] From here, actuation in the computer by the side of the document and the image processing system 20 which performs document reception and processing is explained. The DOKYU let file 46 sent via a network is memorized as a file on the received computer. As for the DOKYU let file 46 memorized as a file, interpretation, conversion, and executive operation of a security program are performed by the DOKYU let execution environment 44 at the time of opening, and the document itself performs security authentication for document opening to the security checkpoint on a network.

[0062] If security authentication is permitted, the separation program for separating the data division and the data-processing section inside a DOKYU let file will be performed. In display and edit / preservation processing of an electronic document, an application file 47 and its application program 48 are generated by application as a separation program execution result. Similarly, the print format 49, the deconstructivism POZAPU log ram 50, and the job service program 51 are generated in the case of paper document output processing by printing.

[0063] By making the DOKYU let file 46 which received into an application file, a display and edit, and in case it saves, an application program 48 is performed with the DOKYU let execution environment 44, and the application environment 52 is offered by reading an application file 47. Similarly, in the case of the printing processing which acquires a paper document, the job service program 51 is performed with the DOKYU let execution environment 44, the deconstructivism POZAPU log ram 50 is performed after that, a print format is read, and expansion processing for the

output of the print ready format 53 is performed at it. As those program execution results, the print ready format 53 is outputted and the paper document 41 is acquired.

[0064] Drawing 7 is the explanatory view of a Java execution environment available as a DOKYU let execution environment of the image processing system concerning the 1st operation gestalt. It is possible to consider as the executive program execution environment which carries out transform processing of the image processing system, and the document and the graphics format concerning this operation gestalt, and to use a Java program and a Java execution environment.

[0065] It is also possible to offer composer 42 itself explained by drawing 5 as a Java executive program, and the Java execution environment generally well known as a DOKYU let execution environment 44 can be used by offering the document security program 43-2-3 of the data-processing section 43-2 of the DOKYU let 43, the document job service program 43-2-2, and the document program 43-2-1 as a Java executive program.

[0066] The Java processor 62 to which a Java execution environment performs radial transfer of the Java program 61 and the Java program 61, Java generated as a Java program 61 Byte the cutting tool code interpreter (ByteCode Interpreter) which performs transform processing for Code to the executive program which can be executed in CPU of various computer execution environments -- with 63 CPU64 of the various kinds which exist in each computer execution environment, and each manufacturer, The GUI (Graphical User Interface) window environment 65 which various kinds OS (Operating System) are supporting, It consists of AWT (Abstract Window Toolkit) 66 which perform interface processing for displaying a Java program execution result on the GUI window environment 65.

[0067] Separate into the document program for displaying and editing document contents data and them, respectively, and the contents and the program structure of an electronic document are not made to exist in it separately, as mentioned above. In case an electronic document is created and electronic document data are generated, while generating as document contents data and electronic document file data which has both document programs by the pair By generating as program data with the programming language and the execution environment which do not depend for a document program on various computing devices in a network computing environment In the transmitted network computing environment, a self-extraction format can be independently provided with the execution environment which can display, edit and preservation / printing process the electronic document, without needing any application programs.

[0068] Moreover, while the generation person (creator) who generated the electronic document file guarantees the dependency of electronic document data format and the document data program which deals with them, the format can be chosen freely. Furthermore, it does not have as an interpreter (deconstructivism POZA) program corresponding to the format format that the printing processing data format and the printing program used for printing processing were restricted to immobilization

like the conventional technique, and its format, but it is having enabled it to perform with the document format and the execution environment according to the document, and the printing environment where a high speed and high definition printing processing can be performed can provide now also in a printing environment.

[0069] Here, the document and graphics format of what kind of format are sufficient as an application document and an image file, OS drawing method document and an image file, a PDL document and an image file, the document and image file by which vector encoding was carried out, the document and image file by which encoding was compressed and carried out, the document and image file by which raster encoding was carried out, a raster document, an image file, etc., and a dynamic-image data file is sufficient as a format of document contents data (data division).

[0070] Moreover, the program format of carrying out interpretation / expansion executive operation in what kind of formats, such as an application executive program, OS drawing method interpretation / expansion program, PDL interpretation / expansion program, vector encoding interpretation / expansion program, compression, an encoding file interpretation and an executive program, a raster encoding file interpretation and an executive program, and raster file interpretation / expansion executive program, is sufficient in a document program (data-processing section). However, when data division are dynamic-image data files, it becomes a time-varying-image-processing program with a natural thing.

[0071] In addition, although the above-mentioned operation gestalt explained the case of a configuration of give data division and the data processing section as a document and a graphics format, it is possible also in give color proper information, such as a color space which can respond to various activation resource environments transmit, and the color transform processing section which uses in order to carry out conversion activation in the activation resource environment at the format which can print [inter exchange, transmission, a display, edit, preservation, and] data division. Thereby, color proper information is acquired in the transmitted activation resource environment, and it becomes possible by interpreting the color transform-processing section to perform color transform processing to color information.

[0072] Moreover, although [the above-mentioned operation gestalt] the data-processing section of a document and a graphics format is used for assignment of printing processing, SEKYURITE, accounting, etc., many things are considered as the directions. For example, it is made to include the virtual image processing system model itself which exists on the network which can perform processing relevant to various printings by which executive operation is carried out after transmission or before transmission, or its location information in the data-processing section of a document and a graphics format. Thereby, in any environments, activation of the document and image data-editing processing relevant to various printings is attained using the data division, the data-processing section, and the virtual image processing system model of a document and a graphics format.

[0073] Furthermore, the so-called version up of the electronic document which changes these property information bureau, data division, and the data-processing section into the newest configuration can be suitably realized by giving a property information bureau to the data division and the data-processing section of a document and a graphics format, respectively, and enabling it to hold the logical and physical positional information and link relation with a property information management means which manage those property information.

[0074] Moreover, although [the above-mentioned operation gestalt] the live data of the data division of a document and a graphics format and the program data of the data-processing section are transmitted For example, data division and the data-processing section are physically separated by making it exist in the specific activation resource environment of a network environment where the data-processing section can be transmitted. It is also possible for it to be made to perform by addressing by reading serially through a network environment, in case conversion executive operation of the data division is carried out to the format in which inter exchange, transmission, a display, edit, preservation, and printing are possible in the activation resource environment concerned. According to this, there is an advantage which can make small data size to transmit.

[0075] Drawing 8 is the block diagram showing the outline of the configuration of the image processing system concerning the 2nd operation gestalt of this invention. In drawing 8 , the image processing system concerning this operation gestalt consists of the document and image generation equipment 70 (image sending set) which transmits by generating a document and image data, and the document and image processing system 80 (image receiving set) which receive the document and image data transmitted from this document and image generation equipment 70, and perform that processing.

[0076] The concrete configuration of these documents, image generation equipment 70, and the document and an image processing system 80 is explained below. First, a document and image generation equipment 70 are plurality (in this example). Three a document and the image creation sections 71-1 to 71-3, three documents and the image data generation sections 72-1 to 72-3, a document and the image data accumulation section 73, a document and the image data display section 74, the data-processing section generation section 75, the data-division generation section 76, the data data-processing composition section 77, It is constituted by a document, the image file composition processing section 78, and data and the processing transmitting section 79.

[0077] In this document and image generation equipment 70, three a document and the image creation sections 71-1 to 71-3 are for creating the document and image of a respectively different format on computers, such as a personal computer. The document and image of each format created and edited are changed and outputted to the document and image data format for which it depended on each of the three a document and the image creation sections 71-1 to 71-3 as a document and image data in three the document and the image data generation sections 72-1 to 72-3 which correspond, respectively by

these documents and the image creation section 71-1 to 71-3. Three the document and the image creation sections 71-1 to 71-3, and three the documents and the image data generation sections 72 which are said here can be considered as general document and image creation application software (operating environment hardware is included).

[0078] Two or more document and image data from which the format generated in a document and the image data generation section 72-1 to 72-3 generally differs are accumulated in a document and the image data accumulation section 73, and is held. Moreover, two or more document and image data accumulated in a document and the image data accumulation section 73 are displayed in a document and the image data display section 74, and edit processing is performed. The document and the image data accumulation section 73 said here can be considered as a hard disk which is the primary-storage memory on a computer. Moreover, as a document and the image data display section 74, the display of a computer or other display devices may be used.

[0079] Next, the cotton of two or more document and image data accumulated in a document and the image data-accumulation section 73, i.e., two or more documents and image data which creation and edit completed, is carried out to the data-processing section generation section 75, and they are outputted as two or more data-processing sections for using two or more data-processing sections required in order to interpret and develop a document and image data, i.e., a document and image data, for the purpose, such as inter exchange, preservation, transmission, a display, edit, and printing.

[0080] Similarly, cotton is carried out also to the data-division generation section 76, and it is changed as two or more data divisions which are component data of two or more document and image data, and is outputted. The cotton of two or more data divisions extracted in two or more data-processing sections and data-division generation sections 76 which were extracted in the data-processing section generation section 75 is carried out to the data data-processing composition section 77, and they are generated as one new document and image file.

[0081] Here, when the document and image file generated in the data data-processing composition section 77 are the document and an image file created in the document and the image creation section 71-1 to 71-3 of the class from which plurality differs, merge (merge) processing to a document and a graphics file format single in a document and the image file composition processing section 78 is performed for two or more document and image files. Single document and image file generated in a document and the image file composition processing section 78 are transmitted to the document, image share, and mutual exchange environment made into the purpose through a network by the document and both the image file transmission part 79.

[0082] On the other hand, a document and an image processing system 80 are constituted by a document and both the image file transmission part 81, a document and the image file separation processing section 82, the data data-processing separation section 83, the data-processing section execute-form transducer 84, the data-processing section storage section 85, the data-division storage

section 86, the data-processing section activation section 87, a document and an image control unit 88, a document and the image expansion storage section 89, a document and image display / editorial department 90, a document and the image output interface section 91, and a document and the image output section 92

[0083] In this document and image processing system 80, single document and image data (a document and image file) which has the graphics file format from which the plurality received by the document and both the image file transmission part 81 differs are divided into each term unit by two or more document and image data by the document and image file part ***** 82. In the data data-processing separation section 83, decomposition processing of two or more of these separated document and image data is carried out at data division and the data-processing section.

[0084] The data-processing section generated by carrying out decomposition processing in this data data-processing separation section 83 is changed into the format which can be performed by the data-processing section execute-form transducer 84 with the hardware and the software execution environment of this writing and an image processing system 80. The format which is outputted here and which can be performed points out a software program or a hardware script etc. which can be performed in the environment. The data-processing section changed into the execute form which can be performed in a receiving environment by the data-processing section execute-form transducer 84 is temporarily memorized by the data-processing section storage section 85.

[0085] The data division extracted by dissociating in the data data-processing separation section 83 on the other hand are memorized by the data-division storage section 86, and are held temporarily. Transform processing of the data-processing section and data division of a document and image data which were memorized by the data-processing section storage section 85 and the data-division storage section 86 is carried out to the format which can save [a display, edit, printing, and] the document and image data which cotton is carried out to the data-processing section activation section 87, and is made into the purpose. here -- two or more document and image data -- as the document and image file of a single format -- dealing with it -- beforehand -- standing in a line -- changing (PURIKORESHON) -- etc. -- in case processing is performed, the processing is performed by the document and the image control unit 88.

[0086] The cotton of the document and the image data which formal transform processing was carried out in the data-processing section activation section 87, and was operated by the document and the image control unit 88 is carried out to a document and the image expansion storage section 89, and display processing is performed by a document, image display, and the editorial department 90 on the occasion of edit and a display. Moreover, when the document and image data memorized by a document and the image expansion storage section 89 aim at the printed output, it is possible by being sent to a document and the image output section 92 via a document and the image output interface section 91 to obtain a printout.

[0087] By the configuration of the image processing system concerning the 2nd operation gestalt mentioned above, the document and image data which was created in two or more document and image creation sections 71-1 to 71-3 and from which a format differs, respectively can be processed as the document and an image file of a single format, and the environment in which a share, inter exchange, preservation, a display, edit, and printing are possible can be offered.

[0088] Drawing 9 is the comparison Fig. of the document structure of the conventional example, and the document structure processed with the image processing system concerning the 2nd operation gestalt. Here, the document structure at the time of dealing with two or more document and image files of a different class created with a different application program in OS and the platform environment where plurality differs as single document and image file is described. Drawing 9 (a) shows the document created with three different application programs, and is a document and an image file with different execution environment and data format created with an application program different, respectively.

[0089] Drawing 9 (b) shows the document structure when merging the document created with three different application programs with an OLE (Object Linking and Embedding) technique, and has structure which embedded the document and the image file (data) created with applications 1 and 2 as an object into the document and the image file (data) created with application 3. When performing share, inter exchange, preservation, display and edit / printing processing of an electronic filing document and an image file with this structure, applications 1 and 2 must exist completely independently [application 3] in addition to application 3.

[0090] The document structure when merging the document created with drawing 9 (c) and a different application program of three ** with the application of single data format is shown, and the data after conversion serve as a format in which composition / division processing is possible with the single application 4 by carrying out export (conversion) processing of the document and the image file created with three different applications 1, 2, and 3 at the DS (raster data and PDF) of a single format. However, a share, inter exchange, preservation, a display and edit, and in case it prints, an application program 4 must exist these documents and an image file.

[0091] On the other hand, drawing 9 (d) shows the document structure when carrying out the merge application of the document created with three different application programs in the document and the image generation equipment 70 concerning the 2nd operation gestalt. Transform processing of the document and the image file of three different classes, the application program 1 by which the merge application was carried out with the document and the image generation equipment 70 concerning the 2nd operation gestalt, an application program 2, and an application program 3, is carried out as the DOKYU let 1, the DOKYU let 2, and DOKYU let 3, and it is merged as DOKYU let 4, and forms the document and image file of a single format.

[0092] In this case, it becomes possible to perform each processing, without being dependent on other

application programs, also in case each document and image data are accessed and merge divide processing is carried out, and also in case a share, the inter exchange, preservation, display, edit, and printing of a document and an image file are performed.

[0093] Drawing 10 is the flow Fig. showing the flow of conversion and processing of the document and graphics format in the image processing system concerning the 2nd operation gestalt. Based on this flow Fig., the flow of actuation of the image processing system concerning the 2nd operation gestalt, and conversion and processing of a document graphics format is explained.

[0094] First, explanation of actuation of a document and image generation equipment (document generation / transmitting side) 70 generates the application program file A created with two or more different application programs, the application program file B, and the application program file C as the DOKYU let file A which is an activation document file which includes data document handling and a job service security program by the composer 101, the DOKYU let file B, and a DOKYU let file C. The merge application of generated DOKYU let file A/B/C is carried out to the document and image file of a single format in the DOKYU let merge-application section 102, it is generated as a DOKYU let file D, and is transmitted to the various computers of share / distribution place via a network after that.

[0095] From here, the actuation in the computer of a document and an image processing system (document share / processing side) 80 is explained. The DOKYU let file D sent via a network from a document and image generation equipment 70 is divided in the DOKYU let divide processing section 103, and is generated as the DOKYU let file A, the DOKYU let file B, and a DOKYU let file C. In case executive operation of these DOKYU let file A/B/C is carried out with the DOKYU let execution environment 104 and it carries out display processing with an application program, it is generated as document A/B/C, and in case printing processing is carried out, transform processing of it is carried out as print ready format A/B/C.

[0096] After document A/B/C and print ready format A/B/C by which transform processing was carried out are read into the application environment 105, respectively, and serve as a format in which a display, edit, and preservation are possible as electronic document A/B/C and are changed into the print ready format 106, they become possible [obtaining the output as paper document A/B/C].

[0097] In the 2nd operation gestalt explained above, a document and image generation equipment 70 are single. The image processing system of the configuration of having had three a document and the image creation sections 71-1 to 71-3, for example which creates the document and image of a format which is different in this single document and image generation equipment 70, respectively, That is, although the case where it applied to the image processing system of a configuration of that application is different in the same environment was explained, a document and image generation equipment 70 do not necessarily need to be single.

[0098] For example, as shown in drawing 11 , it is also possible to carry out to the image processing

system of a configuration of to have prepared the document and the image generation equipment 70-1 which consists of computing architecture from which plurality differs - 70-n to single document and image processing system 80, i.e., the image processing system of a configuration of that an environment (computing architecture to which each OS of Macintosh, Unix, and Windows operates) is different. In the case of the image processing system of this configuration, in the document and the image processing system 80 shown in drawing 8, the operation with useful document and image control unit 88 is made. That is, two or more document and image data transmitted from two or more document and image generation equipments 70-1 - 70-n are dealt with as the document and an image file of a single format, and processing of term rectification, edit, etc. is performed.

[0099] Thus, by considering as the configuration which prepared two or more document and image generation equipments 70-1 - 70-n to single document and image processing system 80 The document and image data generated in two or more document and image data generation sections 72-1 to 72-3 in two or more document and image generation equipments 70-1 - 70-n from which a format differs respectively It can be dealt with as single document and image file with the document and image file of a respectively independent different format, without changing into single document and graphics format. If it puts in another way, two or more electronic documents created with the application with which the plurality of the hardware operating environment from which plurality differs differs can be dealt with as a single electronic document, and inter exchange, transmission, display, edit and preservation / printing processing can be performed.

[0100]

[Effect of the Invention] Without being dependent on various computer devices, the network and the electronic document environment which can perform inter-exchange, transmission, display, edit and preservation / printing processing of an electronic document can offer, and as having explain to the detail above, since the various limits which the logical and physical coincidence existence nature of the contents of an electronic document and programming and a logical dependency moreover have can eliminate, according to this invention, the readability of an electronic document with the passage of time can guarantee in a network-computing environment.

[0101] Moreover, since it is selectable without a concatenation dependency, problems, such as display quality at the time of outputting an electronic document paper document to various devices, can also solve and guarantee the transmission medium, the DS, and the data-processing program of an electronic document on a document generation side.

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the outline of the configuration of the image processing system concerning the 1st operation gestalt of this invention.

[Drawing 2] It is the block diagram of the image processing system concerning the conventional example.

[Drawing 3] It is the block diagram of the image processing system concerning the 1st operation gestalt.

[Drawing 4] It is drawing which contrasts the image processing system (a) concerning the conventional example, and the image processing system (b) concerning the 1st operation gestalt about the dependency of an image-processing component / document and a graphics format / electron, and a paper document.

[Drawing 5] It is drawing showing the internal structure of the image-processing component / document, and the graphics format concerning the 1st operation gestalt, and in (a), (b) shows the internal structure of DOKYU let and (c) shows the internal structure of a DOKYU let execution environment for a composer's internal structure, respectively.

[Drawing 6] It is the flow Fig. showing the flow of conversion and processing of the document and graphics format in the image processing system concerning the 1st operation gestalt.

[Drawing 7] It is the explanatory view of a Java execution environment available as a DOKYU let execution environment of the image processing system concerning the 1st operation gestalt.

[Drawing 8] It is the block diagram showing the outline of the configuration of the image processing system concerning the 2nd operation gestalt of this invention.

[Drawing 9] It is the comparison Fig. of the document structure of the conventional example, and the document structure concerning the 2nd operation gestalt.

[Drawing 10] It is the flow Fig. showing the flow of conversion and processing of the document and graphics format in the image processing system concerning the 2nd operation gestalt.

[Drawing 11] It is the block diagram showing the modification of the 2nd operation gestalt.

[Description of Notations]

10, 70, and 70-1 - 70-n -- A document and image generation equipment, 11, 71-1 to 71-3 -- A document and the image creation section, 12 72-1 to 72-3 -- 15 A document and the image data generation section, 75 -- Data-processing section generation section, 16 76 -- 17 The data-division

generation section, 77 -- Data data-processing composition section, 20 80 [-- The data-processing section activation section, 78 / -- A document and the image file composition processing section, 82 / -- A document and the image file separation processing section, 88 / -- A document and image control unit] -- 22 A document and an image processing system, 83 -- 23 The data data-processing separation section, 84 -- 26 A data-processing section execute-form transducer, 87

[Translation done.]

[Translation done.]